

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	10356	HYDROGENATION.CLM.	US-PGPU B; USPAT	OR	OFF	2006/08/28 13:33
L2	11912	NITRILE.CLM.	US-PGPU B; USPAT	OR	OFF	2006/08/28 13:33
L3	401	L1 AND L2	US-PGPU B; USPAT	OR	OFF	2006/08/28 13:33
L4	85132	NITRILE OR DINITRILE	US-PGPU B; USPAT	OR	ON	2006/08/28 13:34
L5	389737	AMINE OR DIAMINE	US-PGPU B; USPAT	OR	ON	2006/08/28 13:34
L6	1033	L1 AND L4 AND L5	US-PGPU B; USPAT	OR	ON	2006/08/28 13:34
L7	29695	NI.CLM.	US-PGPU B; USPAT	OR	ON	2006/08/28 13:34
L8	57	L7 AND L6	US-PGPU B; USPAT	OR	ON	2006/08/28 13:34
L9	210125	PALLADIUM OR PD	US-PGPU B; USPAT	OR	ON	2006/08/28 13:35
L10	47	L9 AND L8	US-PGPU B; USPAT	OR	ON	2006/08/28 13:35
L11	377839	AROMATIC	US-PGPU B; USPAT	OR	ON	2006/08/28 13:35
L12	98417	AROMATIC.CLM.	US-PGPU B; USPAT	OR	ON	2006/08/28 13:36

## EAST Search History

L13	12	L12 AND L10	US-PGPU B; USPAT	OR	ON	2006/08/28 13:36
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CAS ONLINE PRINTOUT

=> d his

(FILE 'HOME' ENTERED AT 07:16:16 ON 28 AUG 2006)

FILE 'REGISTRY' ENTERED AT 07:16:29 ON 28 AUG 2006

FILE 'CASREACT' ENTERED AT 07:16:36 ON 28 AUG 2006

L1           STRUCTURE UPLOADED  
L2           0 S L1  
L3           5 S L1 FUL

FILE 'REGISTRY' ENTERED AT 07:25:32 ON 28 AUG 2006

L4           STRUCTURE UPLOADED  
L5           0 S L4  
L6           STRUCTURE UPLOADED  
L7           50 S L6  
L8           0 S L4 CSS  
L9           STRUCTURE UPLOADED  
L10          0 S L9  
L11          SCREEN 1840 OR 2127  
L12          STRUCTURE UPLOADED  
L13          QUE L12 NOT L11  
L14          0 S L13  
L15          0 S L13 CSS  
L16          STRUCTURE UPLOADED  
L17          QUE L16  
L18          0 S L17 CSS  
L19          0 S L13 CSS  
L20          0 S L17 CSS FUL  
L21          STRUCTURE UPLOADED  
L22          QUE L21  
L23          2 S L21  
L24          245 S L21 FUL  
L25          50 S L6  
L26          22081 S L6 FUL

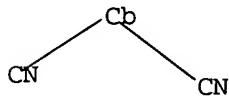
FILE 'CAPLUS' ENTERED AT 07:35:19 ON 28 AUG 2006

L27          6413 S L26/RCT  
L28          70 S L24/P  
L29          1 S L28 AND L27

=> d l6

L6 HAS NO ANSWERS

L6           STR



Structure attributes must be viewed using STN Express query preparation.

=> d l21

L21 HAS NO ANSWERS

L21           STR

## CAS ONLINE PRINTOUT

=&gt; d his

(FILE 'HOME' ENTERED AT 08:21:46 ON 28 AUG 2006)

FILE 'REGISTRY' ENTERED AT 08:21:54 ON 28 AUG 2006

FILE 'CAPLUS' ENTERED AT 08:21:58 ON 28 AUG 2006

E EP1449825/PN

L1 1 S E3  
L2 10800 S AMINES, PREPARATION/IT  
L3 0 S NITRILES, REACTIONS.IT  
L4 4405 S NITRILES, REACTIONS/IT  
L5 392 S L4 AND L2  
L6 121270 S HYDROGENATION/IT  
L7 254 S L6 AND L5  
L8 138006 S PALLADIUM/IT  
L9 36 S L8 AND L7  
L10 514985 S NICKEL/IT  
L11 25 S L10 AND L9  
L12 137783 S AROM/IT  
L13 5 S L12 AND L11

=&gt; d bib abs it 1-5

L13 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:700273 CAPLUS

DN 141:190594

TI High-selectivity two-step hydrogenation process and catalysts for the  
preparation of di(aminomethyl)aromatic compounds from dicyanoaromatic  
compounds

IN Kanamori, Yoshinori; Ebata, Shuji; Tsukahara, Kengo; Yamamoto, Yoshiaki

PA Mitsubishi Gas Chemical Company, Inc., Japan

SO Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1449825	A1	20040825	EP 2004-2100	20040131
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2004269510	A2	20040930	JP 2004-31638	20040209
	CN 1523007	A	20040825	CN 2004-10005845	20040220
	US 2005277790	A1	20051215	US 2004-781884	20040220
PRAI	JP 2003-42397	A	20030220		

OS CASREACT 141:190594; MARPAT 141:190594

AB Di(aminomethyl)-substituted aromatic compds. [e.g., 1,3-bis(aminomethyl)benzene] is produced by a two-stage hydrogenation of a dicyanoarom. (e.g., isophthalonitrile) compound into a cyano(aminomethyl)-substituted aromatic compound [e.g., 3-(aminomethyl)benzonitrile] in the presence of a Pd-containing catalyst (e.g., Pd/Al<sub>2</sub>O<sub>3</sub>) and in the second-stage hydrogenation, the cyano(aminomethyl)-substituted aromatic compound is hydrogenated into the target compound in the presence of a Ni- and/or Co-containing catalyst (e.g., Raney Ni). This method produces the di(aminomethyl)-substituted aromatic compound in high selectivity and yield without reducing the catalyst life.

IT Hydrogenation catalysts

(Pd-containing catalyst and Ni- and/or Co-containing catalyst in the two-step hydrogenation process and catalysts for the preparation of

CAS ONLINE PRINTOUT

- di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT Nitriles, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (amino, cyano(aminomethyl)-substituted arom. compds.; in a high-selectivity two-step hydrogenation process for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT Amines, preparation  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (diamines, arom., di(aminomethyl)arom. compds.; high-selectivity two-step hydrogenation process and catalysts for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT Nitriles, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (dinitriles, arom.; high-selectivity two-step hydrogenation process and catalysts for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT Hydrogenation  
 (for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT 7440-02-0, Raney nickel, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts; two-step hydrogenation process and catalysts for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT 539-48-0P, 1,4-Bis(aminomethyl)benzene 1477-55-0P, 1,3-Bis(aminomethyl)benzene  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (high-selectivity two-step hydrogenation process and catalysts for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT 623-26-7, Terephthalonitrile 626-17-5, Isophthalonitrile 13554-71-7, 1,5-Dicyanonaphthalene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (high-selectivity two-step hydrogenation process and catalysts for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT 10406-24-3P, 3-(Aminomethyl)benzonitrile 10406-25-4P, 4-(Aminomethyl)benzonitrile 740799-02-4P  
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (in a high-selectivity two-step hydrogenation process for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT 46263-19-8P, 1,5-Naphthalenedimethanamine  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (in a high-selectivity two-step hydrogenation process for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT 1333-74-0, Hydrogen, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in a two-step hydrogenation process for the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)
- IT 1344-28-1, Alumina, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (support; two-step hydrogenation process and catalysts for

## CAS ONLINE PRINTOUT

the preparation of di(aminomethyl)arom. compds. from dicyanoarom. compds.)

IT 7440-05-3, Palladium, uses 7440-48-4, Cobalt, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (two-step hydrogenation process and catalysts for the preparation  
 of di(aminomethyl)arom. compds. from dicyanoarom. compds.)

L13 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:203176 CAPLUS

DN 138:223286

TI Monolith catalytic reactor coupled to a static mixer

IN Welp, Keith Allen; Cartolano, Anthony Rocco; Parrillo, David Joseph;  
 Boehme, Richard Peter; Machado, Reinaldo Mario; Caram, Sylvia

PA USA

SO U.S. Pat. Appl. Publ., 9 pp., Cont.-in-part of U.S. Ser. No. 942,839.  
 CODEN: USXXCO

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003049185	A1	20030313	US 2002-53787	20020121
	US 2003050510	A1	20030313	US 2001-942839	20010830
	BR 2002003375	A	20030527	BR 2002-3375	20020826
	EP 1287884	A2	20030305	EP 2002-19084	20020828
	EP 1287884	A3	20040204		
	EP 1287884	B1	20060322		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	AT 320848	E	20060415	AT 2002-19084	20020828
	JP 2003176255	A2	20030624	JP 2002-251007	20020829
	CN 1403191	A	20030319	CN 2002-132115	20020830
	US 2005129594	A1	20050616	US 2005-48582	20050201
PRAI	US 2001-942839	A2	20010830		
	US 2002-53787	A	20020121		

AB The title apparatus is comprised of a monolith catalytic reactor having an inlet and an outlet and a static mixer having an inlet and an outlet with the outlet of the static mixer in communication with the inlet of the monolith catalytic reactor. For effecting a reaction (e.g., hydrogenation) in the monolith catalytic reactor, a reactant gas (e.g., hydrogen) and a reactant liquid (e.g., dinitrotoluene) are fed into the inlet to the monolith catalytic reactor, reacted and, then, the reaction product (e.g., diaminotoluene) passed through the outlet of the monolith catalytic reactor.

IT Imines

RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (aldimines; monolith catalytic hydrogenation reactor coupled  
 to a static mixer for the hydrogenation of)

IT Hydrogenation

(apparatus; monolith catalytic reactor coupled to a static mixer)

IT Nitro compounds

RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (arom.; monolith catalytic hydrogenation reactor  
 coupled to a static mixer for the hydrogenation of)

IT Catalyst supports

(honeycomb; in a monolith catalytic reactor coupled to a static mixer)

IT Reactors

(hydrogenation; monolith catalytic reactor coupled to a  
 static mixer)

CAS ONLINE PRINTOUT

IT Group IB elements  
 Group VIB elements  
 Group VIIB elements  
 Group VIII elements  
 RL: CAT (Catalyst use); USES (Uses)  
 (in a monolith catalytic reactor coupled to a static mixer)

IT Imines  
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (ketimines; monolith catalytic hydrogenation reactor coupled to a static mixer for the hydrogenation of)

IT Nitriles, reactions  
 Unsaturated compounds  
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (monolith catalytic hydrogenation reactor coupled to a static mixer for the hydrogenation of)

IT Amines, preparation  
 RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)  
 (monolith catalytic hydrogenation reactor coupled to a static mixer for the hydrogenation of unsatd. compds. leading to)

IT Hydrogenation catalysts  
 Reactors  
 (monolith catalytic reactor coupled to a static mixer)

IT Aromatic compounds  
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (nitro; monolith catalytic hydrogenation reactor coupled to a static mixer for the hydrogenation of)

IT Mixers (processing apparatus)  
 (static; monolith catalytic reactor coupled to a static mixer)

IT Hydrogenation  
 (using a monolith catalytic reactor coupled to a static mixer)

IT 7440-02-0, Nickel, processes 7440-05-3, Palladium, processes  
 RL: CAT (Catalyst use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
 (in a monolith catalytic hydrogenation reactor coupled to a static mixer)

IT 26764-44-3P  
 RL: EPR (Engineering process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)  
 (in a monolith catalytic hydrogenation reactor coupled to a static mixer)

IT 25321-14-6, Dinitrotoluene  
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
 (in a monolith catalytic hydrogenation reactor coupled to a static mixer)

IT 1333-74-0, Hydrogen, reactions  
 RL: EPR (Engineering process); PEP (Physical, engineering or chemical process); RCT (Reactant); RGT (Reagent); PROC (Process); RACT (Reactant or reagent)  
 (in a monolith catalytic hydrogenation reactor coupled to a static mixer)

IT 1302-88-1, Cordierite 1344-28-1, Alumina, processes  
 RL: CAT (Catalyst use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

## CAS ONLINE PRINTOUT

(support; in a monolith catalytic hydrogenation reactor  
coupled to a static mixer)

L13 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:977775 CAPLUS

DN 138:39092

TI Chemoselective hydrogenation process and catalysts for the production of  
primary (haloarylmethyl)amines from halobenzonitriles

IN Kondo, Hideyuki; Suyama, Yuseki; Morikawa, Kohei

PA Showa Denko K.K., Japan

SO PCT Int. Appl., 26 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002102760	A1	20021227	WO 2002-JP6008	20020617
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	JP 2003073342	A2	20030312	JP 2002-115549	20020418
	EP 1401799	A1	20040331	EP 2002-736129	20020617
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	RU 2247713	C2	20050310	RU 2003-107058	20020617
	US 2003158444	A1	20030821	US 2003-344263	20030210
	US 6960691	B2	20051101		
PRAI	JP 2001-183006	A	20010618		
	US 2001-301144P	P	20010628		
	JP 2002-115549	A	20020418		
	JP 2001-115549	A	20020418		
	WO 2002-JP6008	W	20020617		

OS CASREACT 138:39092; MARPAT 138:39092

AB In an industrially viable process, halobenzonitriles (e.g., tetrafluoroterephthalonitrile), useful as intermediates, are chemoselectively hydrogenated into their corresponding primary (haloarylmethyl)amines [e.g., 1,4-bis(aminomethyl)-2,3,5,6-tetrafluorobenzene] in the presence of a hydrogenation catalyst (e.g., sponge nickel) and an organic acid (e.g., acetic acid) in a solvent (e.g., toluene and water).

IT Nitriles, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(arom., halobenzonitriles; chemoselective hydrogenation process and catalysts for the production of primary (haloarylmethyl)amines from halobenzonitriles)

IT Chemoselectivity

(chemoselective hydrogenation process and catalysts for the production of primary (haloarylmethyl)amines from halobenzonitriles)

IT Hydrogenation

(chemoselective; for the production of primary (haloarylmethyl)amines from halobenzonitriles)

IT Hydrogenation catalysts

(chemoselective; transition metals in the presence of organic acids for the production of primary (haloarylmethyl)amines from halobenzonitriles)



CAS ONLINE PRINTOUT

- IT Amines, preparation  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (diamines, arom., diaminohaloarenes; chemoselective hydrogenation process and catalysts for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT Nitriles, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (dinitriles, halobenzodinitriles; chemoselective hydrogenation process and catalysts for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT Carboxylic acids, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (hydrogenation catalysts with transition metals for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT Acids, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (organic; hydrogenation catalysts with transition metals for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT Amines, preparation  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (primary, (haloarylmethyl)amines; chemoselective hydrogenation process and catalysts for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT Alcohols, uses  
 Aromatic hydrocarbons, uses  
 Esters, uses  
 Ethers, uses  
 Hydrocarbons, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvents; in a chemoselective hydrogenation process for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT 89992-50-7P 478912-17-3P  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (chemoselective hydrogenation process and catalysts for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT 1835-49-0, Tetrafluoroterephthalonitrile 2377-81-3, Tetrafluoroisophthalonitrile  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (chemoselective hydrogenation process and catalysts for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT 7439-98-7, Molybdenum, uses 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-18-8, Ruthenium, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (hydrogenation catalyst with organic acids for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT 64-18-6, Formic acid, uses 64-19-7, Acetic acid, uses 79-09-4, Propionic acid, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (hydrogenation catalyst with transition metals for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT 1333-74-0, Hydrogen, reactions  
 RL: RCT (Reactant); RGT (Reagent); RACT (Reactant or reagent)  
 (in a chemoselective hydrogenation process for the production of primary (haloarylmethyl)amines from halobenzonitriles)
- IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 71-43-2, Benzene, uses 100-41-4, Ethylbenzene, uses 108-88-3, Toluene, uses 109-99-9, THF,

## CAS ONLINE PRINTOUT

uses 110-54-3, Hexane, uses 110-82-7, Cyclohexane, uses 123-91-1, Dioxane, uses 141-78-6, Ethyl acetate, uses 646-06-0, Dioxolane 1330-20-7, Xylene, uses 7732-18-5, Water, uses 62309-51-7, Propanol  
RL: NUU (Other use, unclassified); USES (Uses)

(solvent; in a chemoselective hydrogenation process for the production of primary (haloarylmethyl)amines from halobenzonitriles)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:907219 CAPLUS

DN 137:386325

TI Hydrogenation catalysts and process for producing aromatic amines from aromatic nitriles

IN Kanamori, Yoshinori; Ebata, Shuji; Tsukahara, Kengo; Hiramatsu, Yasushi  
PA Japan

SO U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 2002177735	A1	20021128	US 2002-139214	20020507
	EP 1262232	A1	20021204	EP 2002-10805	20020515
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003038958	A2	20030212	JP 2002-145801	20020521
	JP 2003038956	A2	20030212	JP 2002-145802	20020521
PRAI	JP 2001-152012	A	20010522		
	JP 2001-152013	A	20010522		

AB Catalysts for producing aromatic amines (e.g., 3-(aminomethyl)benzyl amine) by hydrogenating aromatic nitriles (e.g., isophthalonitrile) comprise: (1) the catalyst comprising a metal catalyst component comprising Ni and/or Co and a specific amount of zirconia as a carrier component, which is prepared by drying, calcining and forming a precipitate produced by adding an aqueous solution

containing soluble salts of the metal catalyst component and the carrier component to an aqueous alkali solution; and (2) the catalyst comprising the metal catalyst component and the carrier component, which is prepared by filtering a precipitate produced by adding an aqueous solution containing soluble salts of the

metal catalyst component and the carrier component to an aqueous alkali solution;

forming the precipitate without drying to obtain a formed product; and subjecting

the formed product to drying and then calcining. These catalysts are free from breaking owing to rapid generation of methane and evaporation of liquid ammonia by hydrogenolysis of high boiling byproducts of the hydrogenation when reactivated after deactivation of the catalyst, which allows the long-term use of the catalysts.

IT Amines, preparation

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(arom.; hydrogenation catalysts and process for producing arom. amines from arom. nitriles)

IT Nitriles, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(arom.; hydrogenation catalysts and process for producing arom. amines from arom. nitriles)

IT Hydrogenation

CAS ONLINE PRINTOUT

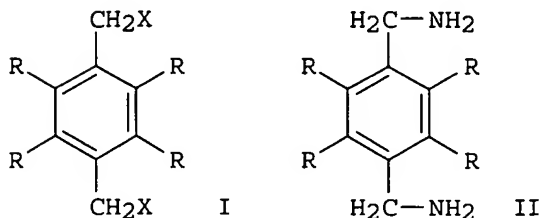
- (for producing arom. amines from arom. nitriles)
- IT Calcination  
Drying  
Granulation  
Precipitation (chemical)  
(in the preparation of hydrogenation catalysts and process for producing arom. amines from arom. nitriles)
- IT Alkali metal hydroxides  
RL: RGT (Reagent); RACT (Reactant or reagent)  
(in the preparation of hydrogenation catalysts and process for producing arom. amines from arom. nitriles)
- IT Molding  
(press, tableting; in the preparation of hydrogenation catalysts and process for producing arom. amines from arom. nitriles)
- IT Hydrogenation catalysts  
(supported Ni and/or Co compns. for producing arom. amines from arom. nitriles)
- IT 7440-02-0, Nickel, processes 7440-48-4, Cobalt, processes  
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
(hydrogenation catalysts and process for producing arom. amines from arom. nitriles)
- IT 623-26-7, Terephthalonitrile 626-17-5, Isophthalonitrile  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydrogenation catalysts containing Ni and/or Co and process for producing arom. amines from arom. nitriles)
- IT 539-48-0P, 1,4-Bis(aminomethyl)benzene 1477-55-0P, 1,3-Bis(aminomethyl)benzene  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(hydrogenation catalysts containing Ni and/or Co and process for producing arom. amines from arom. nitriles)
- IT 7429-90-5, Aluminum, processes 7439-88-5, Iridium, processes 7439-89-6, Iron, processes 7439-96-5, Manganese, processes 7439-98-7, Molybdenum, processes 7440-03-1, Niobium, processes 7440-05-3, Palladium, processes 7440-06-4, Platinum, processes 7440-09-7, Potassium, processes 7440-16-6, Rhodium, processes 7440-17-7, Rubidium, processes 7440-18-8, Ruthenium, processes 7440-21-3, Silicon, processes 7440-23-5, Sodium, processes 7440-24-6, Strontium, processes 7440-32-6, Titanium, processes 7440-39-3, Barium, processes 7440-41-7, Beryllium, processes 7440-45-1, Cerium, processes 7440-46-2, Cesium, processes 7440-47-3, Chromium, processes 7440-50-8, Copper, processes 7440-55-3, Gallium, processes 7440-56-4, Germanium, processes 7440-66-6, Zinc, processes 7440-69-9, Bismuth, processes 7440-70-2, Calcium, processes 7440-74-6, Indium, processes  
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)  
(in hydrogenation catalysts containing Ni and/or Co and process for producing arom. amines from arom. nitriles)
- IT 7732-18-5, Water, processes  
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); REM (Removal or disposal); PROC (Process); USES (Uses)  
(solvent; in the preparation of hydrogenation catalysts and process for producing arom. amines from arom. nitriles)
- IT 1314-23-4, Zirconia, processes 1344-28-1, Alumina, processes 7631-86-9, Silica, processes 13463-67-7, Titania, processes 159995-97-8, Aluminum silicon oxide  
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)

## CAS ONLINE PRINTOUT

(support; hydrogenation catalysts and process for producing  
arom. amines from arom. nitriles)

L13 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2001:564968 CAPLUS  
DN 135:122305  
TI Method for producing 2,3,5,6-(tetrahalo)xylylidene compounds  
IN Langer, Reinhard; Rodefeld, Lars  
PA Bayer Aktiengesellschaft, Germany  
SO PCT Int. Appl., 18 pp.  
CODEN: PIXXD2  
DT Patent  
LA German  
FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001055064	A1	20010802	WO 2001-EP446	20010117
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	DE 10003320	A1	20010809	DE 2000-10003320	20000127
	DE 10003320	C2	20020411		
	AU 2001035423	A5	20010807	AU 2001-35423	20010117
	EP 1254096	A1	20021106	EP 2001-907453	20010117
	EP 1254096	B1	20051109		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003523966	T2	20030812	JP 2001-555009	20010117
	US 2002198401	A1	20021226	US 2002-181997	20020724
	US 6753444	B2	20040622		
PRAI	DE 2000-10003320	A	20000127		
	WO 2001-EP446	W	20010117		
OS	CASREACT 135:122305; MARPAT 135:122305				
GI					



AB 2,3,5,6-(Tetrahalo)xylylidene compds. (I; R = F, Cl; X = F, Cl, Br, OR<sub>1</sub>, O<sub>2</sub>CR<sub>1</sub>; R<sub>1</sub> = H, alkyl, aryl) are prepared in high yield and selectivity by the tetrazotization of the corresponding diamines (II; prepared by hydrogenation of the corresponding dinitriles) with alkyl nitrites or nitrous acid in the presence of HX as a solvent. Thus, 2,3,5,6-tetrafluoroxilylylidene diamine bisulfate was tetraazotized with sodium nitrite in sulfuric acid and the tetrazonium salt hydrolyzed, producing 2,3,5,6-tetrafluoroxilylylidenediol in 76% yield.

CAS ONLINE PRINTOUT

- IT Amines, preparation  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (diamines, arom., 2,3,5,6-(tetrahalo)xylylidene diamines;  
 tetrazotization and reaction into 2,3,5,6-(tetrahalo)xylylidene  
 compds.)
- IT Nitriles, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (dinitriles, 2,3,5,6-(tetrahalo)-1,4-dicyanobenzenes;  
 hydrogenation of)
- IT Platinum-group metals  
 RL: CAT (Catalyst use); USES (Uses)  
 (hydrogenation catalysts for the preparation of  
 2,3,5,6-(tetrahalo)xylylidene diamines from the corresponding  
 dinitriles)
- IT Acids, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (inorg.; producing 2,3,5,6-(tetrahalo)xylylidene compds. using)
- IT Distillation  
 (method for producing 2,3,5,6-(tetrahalo)xylylidene compds. using)
- IT Hydrogenation  
 (of 2,3,5,6-(tetrahalo)-1,4-dicyanobenzenes into their corresponding  
 diamines)
- IT Carboxylic acids, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (producing 2,3,5,6-(tetrahalo)xylylidene compds. using)
- IT Diazotization  
 (tetrazotization; of 2,3,5,6-(tetrahalo)xylylidene diamine in the  
 preparation of 2,3,5,6-(tetrahalo)xylylidene compds.)
- IT 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses  
 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8,  
 Ruthenium, uses 7440-48-4, Cobalt, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (hydrogenation catalyst for the preparation of  
 2,3,5,6-(tetrahalo)xylylidene diamines from the corresponding  
 dinitriles)
- IT 1835-49-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (hydrogenation of)
- IT 92339-07-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (method for producing 2,3,5,6-(tetrahalo)xylylidene compds.)
- IT 7732-18-5, Water, reactions  
 RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or  
 reagent); USES (Uses)  
 (method for producing 2,3,5,6-(tetrahalo)xylylidene compds. using)
- IT 64-18-6, Formic acid, reactions 64-19-7, Acetic acid, reactions  
 65-85-0, Benzoic acid, reactions 79-09-4, Propionic acid, reactions  
 109-95-5, Ethyl nitrite 110-46-3, Isoamyl nitrite 624-91-9, Methyl  
 nitrite 7632-00-0, Sodium nitrite 7647-01-0, Hydrochloric acid,  
 reactions 7664-38-2, Phosphoric acid, reactions 7664-39-3,  
 Hydrofluoric acid, reactions 7664-93-9, Sulfuric acid, reactions  
 7758-09-0, Potassium nitrite 7789-21-1, Fluorosulfonic acid 7790-94-5,  
 Chlorosulfonic acid 13780-06-8, Calcium nitrite 15070-34-5, Magnesium  
 nitrite  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (method for producing 2,3,5,6-(tetrahalo)xylylidene compds. using)
- IT 7782-77-6P, Nitrous acid 350830-30-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (method for producing 2,3,5,6-(tetrahalo)xylylidene compds. using)

CAS ONLINE PRINTOUT

RE.CNT 4      THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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CAS ONLINE PRINTOUT

=> d his

(FILE 'HOME' ENTERED AT 08:21:46 ON 28 AUG 2006)

FILE 'REGISTRY' ENTERED AT 08:21:54 ON 28 AUG 2006

FILE 'CAPLUS' ENTERED AT 08:21:58 ON 28 AUG 2006

E EP1449825/PN

L1 1 S E3  
 L2 10800 S AMINES, PREPARATION/IT  
 L3 0 S NITRILES, REACTIONS.IT  
 L4 4405 S NITRILES, REACTIONS/IT  
 L5 392 S L4 AND L2  
 L6 121270 S HYDROGENATION/IT  
 L7 254 S L6 AND L5  
 L8 138006 S PALLADIUM/IT  
 L9 36 S L8 AND L7  
 L10 514985 S NICKEL/IT  
 L11 25 S L10 AND L9  
 L12 137783 S AROM/IT  
 L13 5 S L12 AND L11

=> s stage?

L14 618810 STAGE?

=> s l14 and l13

L15 1 L14 AND L13

=> d bib

L15 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:700273 CAPLUS

DN 141:190594

TI High-selectivity two-step hydrogenation process and catalysts for the preparation of di(aminomethyl)aromatic compounds from dicyanoaromatic compounds

IN Kanamori, Yoshinori; Ebata, Shuji; Tsukahara, Kengo; Yamamoto, Yoshiaki

PA Mitsubishi Gas Chemical Company, Inc., Japan

SO Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1449825	A1	20040825	EP 2004-2100	20040131
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2004269510	A2	20040930	JP 2004-31638	20040209
	CN 1523007	A	20040825	CN 2004-10005845	20040220
	US 2005277790	A1	20051215	US 2004-781884	20040220
PRAI	JP 2003-42397	A	20030220		
OS	CASREACT 141:190594; MARPAT 141:190594				

=>

CAS ONLINE PRINTOUT

=> d his

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FILE 'REGISTRY' ENTERED AT 07:16:29 ON 28 AUG 2006

FILE 'CASREACT' ENTERED AT 07:16:36 ON 28 AUG 2006

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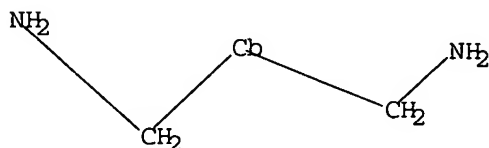
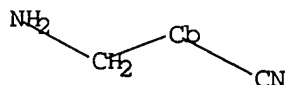
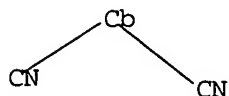
L2 0 S L1

L3 5 S L1 FUL

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L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> d bib hit 1-5

L3 ANSWER 1 OF 5 CASREACT COPYRIGHT 2006 ACS on STN

AN 141:190594 CASREACT

TI High-selectivity two-step hydrogenation process and catalysts for the preparation of di(aminomethyl)aromatic compounds from dicyanoaromatic compounds

IN Kanamori, Yoshinori; Ebata, Shuji; Tsukahara, Kengo; Yamamoto, Yoshiaki

PA Mitsubishi Gas Chemical Company, Inc., Japan

SO Eur. Pat. Appl., 12 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

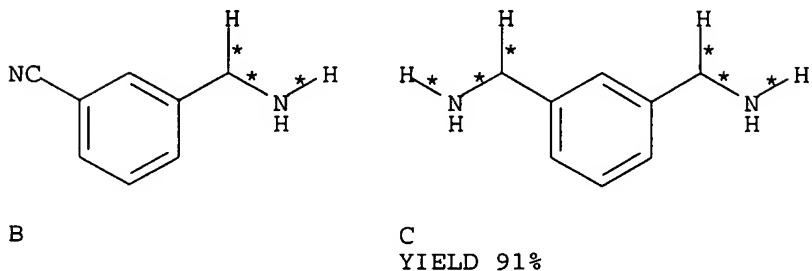
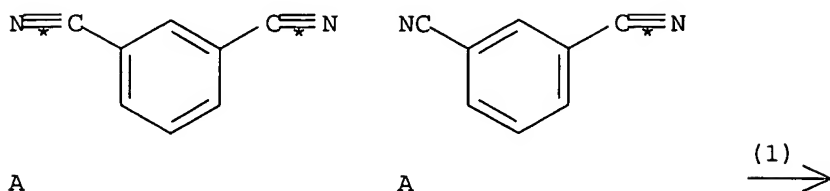
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1449825	A1	20040825	EP 2004-2100	20040131
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				



CAS ONLINE PRINTOUT

JP 2004269510	A2	20040930	JP 2004-31638	20040209
CN 1523007	A	20040825	CN 2004-10005845	20040220
US 2005277790	A1	20051215	US 2004-781884	20040220
PRAI JP 2003-42397	20030220			
OS	MARPAT 141:190594			

RX(1) OF 6      2 A ==> B + C



RX(1)

STAGE(1)

CAT 13138-45-9 Ni(NO3)2, 10141-05-6 Co(NO3)2  
 SOL 7732-18-5 Water  
 CON 40 deg C

STAGE(2)

RGT D 1066-33-7 NH4 bicarbonate  
 SOL 7732-18-5 Water  
 CON SUBSTAGE(1) 40 deg C  
 SUBSTAGE(2) 40 deg C -> 80 deg C  
 SUBSTAGE(3) 30 minutes, 80 deg C  
 SUBSTAGE(4) 80 deg C -> 40 deg C

STAGE(3)

RGT E 13746-89-9 Nitric acid, zirconium(4+) salt  
 SOL 7732-18-5 Water  
 CON SUBSTAGE(1) 40 deg C  
 SUBSTAGE(2) 30 minutes, 40 deg C

STAGE(4)

CON 18 hours, 380 deg C

STAGE(5)

RGT F 1333-74-0 H2  
 CON 400 deg C

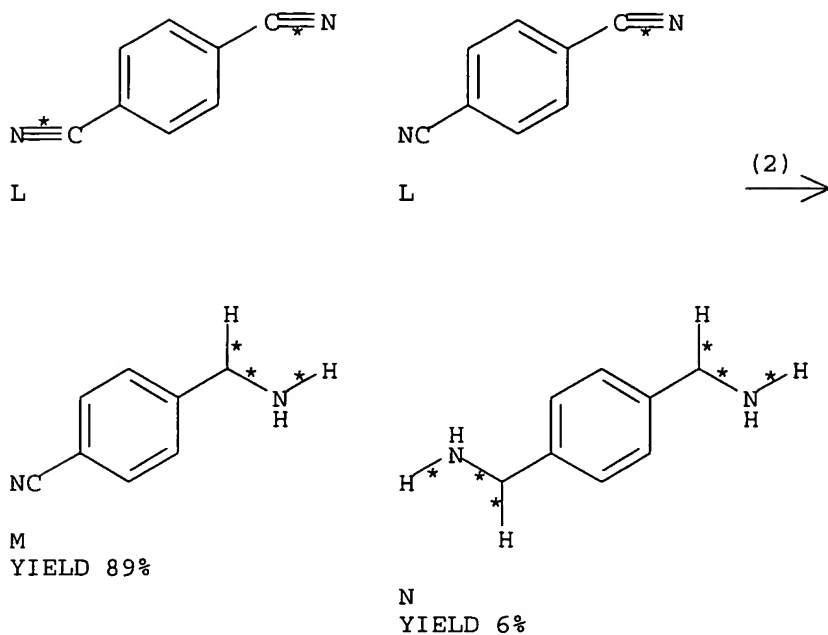
CAS ONLINE PRINTOUT

STAGE(6)

RCT A 626-17-5  
 RGT F 1333-74-0 H2, G 108-67-8 Mesitylene  
 SOL 7664-41-7 NH3  
 CON SUBSTAGE(1) 4.9 MPa  
 SUBSTAGE(2) 50 deg C

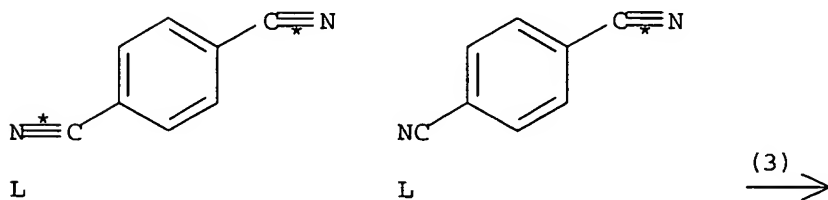
PRO B 10406-24-3, C 1477-55-0  
 NTE catalyst was calcined, thermal

RX(2) OF 6      2 L ==> M + N

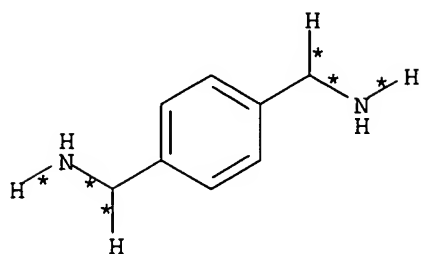
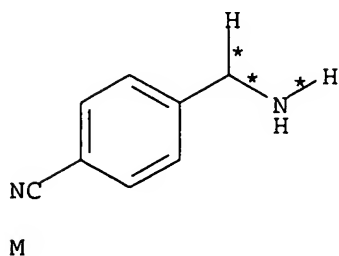


RX(2)      RCT L 623-26-7  
 RGT F 1333-74-0 H2, G 108-67-8 Mesitylene  
 PRO M 10406-25-4, N 539-48-0  
 CAT 7440-05-3 Pd, 1344-28-1 Al2O3  
 SOL 7664-41-7 NH3  
 CON SUBSTAGE(1) room temperature, 4.9 MPa  
 SUBSTAGE(2) 50 deg C

RX(3) OF 6      2 L ==> M + N



CAS ONLINE PRINTOUT



YIELD 92%

RX(3)

STAGE(1)

CAT 13138-45-9 Ni(NO<sub>3</sub>)<sub>2</sub>, 10141-05-6 Co(NO<sub>3</sub>)<sub>2</sub>  
SOL 7732-18-5 Water  
CON 40 deg C

STAGE(2)

RGT D 1066-33-7 NH<sub>4</sub> bicarbonate  
SOL 7732-18-5 Water  
CON SUBSTAGE(1) 40 deg C  
SUBSTAGE(2) 40 deg C -> 80 deg C  
SUBSTAGE(3) 30 minutes, 80 deg C  
SUBSTAGE(4) 80 deg C -> 40 deg C

STAGE(3)

RGT E 13746-89-9 Nitric acid, zirconium(4+) salt  
SOL 7732-18-5 Water  
CON SUBSTAGE(1) 40 deg C  
SUBSTAGE(2) 30 minutes, 40 deg C

STAGE(4)

CON 18 hours, 380 deg C

STAGE(5)

RGT F 1333-74-0 H<sub>2</sub>  
CON 400 deg C

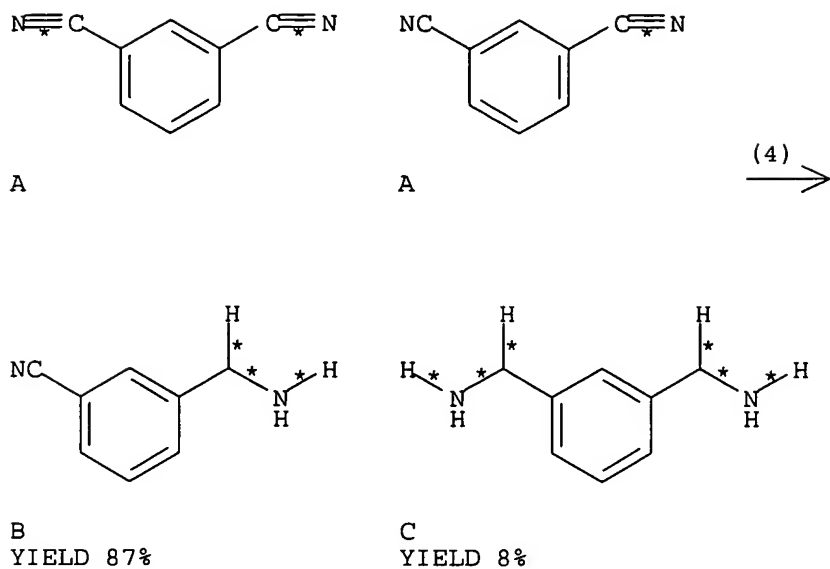
STAGE(6)

RCT L 623-26-7  
RGT F 1333-74-0 H<sub>2</sub>, G 108-67-8 Mesitylene  
SOL 7664-41-7 NH<sub>3</sub>  
CON SUBSTAGE(1) 4.9 MPa  
SUBSTAGE(2) 50 deg C

CAS ONLINE PRINTOUT

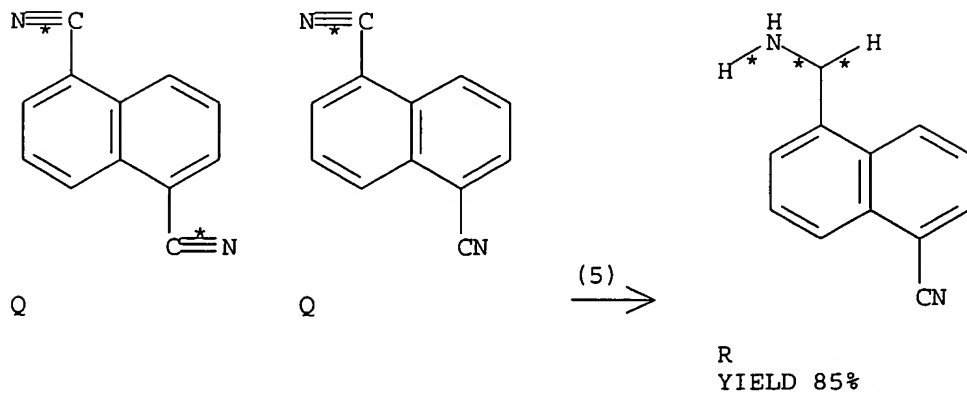
PRO M 10406-25-4, N 539-48-0  
NTE catalyst was calcined, thermal

RX(4) OF 6      2 A ==> B + C



RX(4)      RCT    A 626-17-5  
              RGT    F 1333-74-0 H2, G 108-67-8 Mesitylene  
              PRO    B 10406-24-3, C 1477-55-0  
              CAT    7440-05-3 Pd, 1344-28-1 Al2O3  
              SOL    7664-41-7 NH3  
              CON    SUBSTAGE(1) room temperature, 4.9 MPa  
                      SUBSTAGE(2) 50 deg C

RX(5) OF 6      2 Q ==> R + S



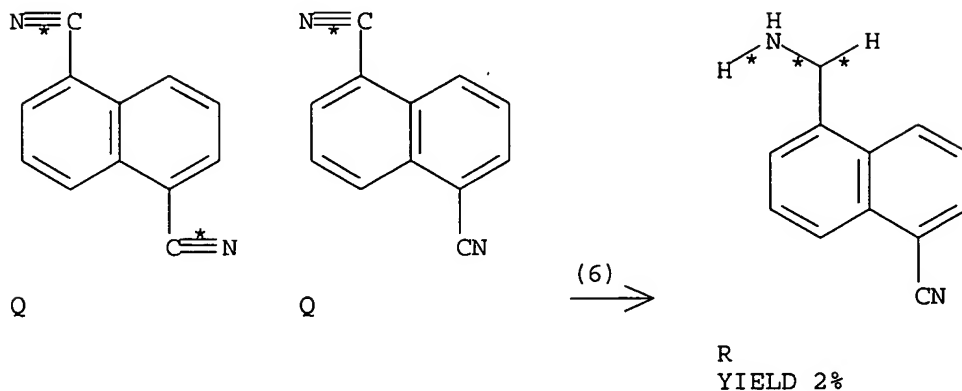
The chemical structure shows 1,8-diaminonaphthalene. The naphthalene ring system is represented by two fused benzene rings. At the 1-position, there is an amino group (-NH<sub>2</sub>) with an asterisk on the nitrogen atom. At the 8-position, there is another amino group (-NH<sub>2</sub>) with an asterisk on the nitrogen atom. The two carbon atoms at positions 1 and 8 are also marked with asterisks, indicating they are stereocenters. The hydrogen atoms on the amino groups are also shown.

S  
YIELD 4%

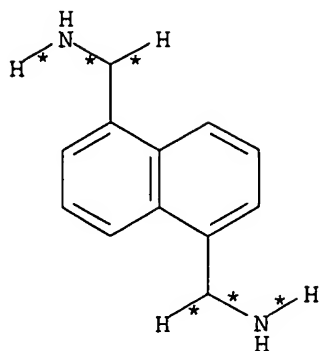
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RX(5)      RCT  Q 13554-71-7
           RGT  F 1333-74-0 H2, G 108-67-8 Mesitylene
           PRO  R 740799-02-4, S 46263-19-8
           CAT  7440-05-3 Pd, 1344-28-1 Al2O3
           SOL  7664-41-7 NH3
           CON  SUBSTAGE(1) room temperature, 4.9 MPa
              SUBSTAGE(2) 50 deg C

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$$\text{RX (6) OF 6} \quad 2 \text{ Q} \implies \text{R} + \text{S}$$


CAS ONLINE PRINTOUT



S  
YIELD 87%

RX(6)

STAGE(1)

CAT 13138-45-9 Ni(NO<sub>3</sub>)<sub>2</sub>, 10141-05-6 Co(NO<sub>3</sub>)<sub>2</sub>  
SOL 7732-18-5 Water  
CON 40 deg C

STAGE(2)

RGT D 1066-33-7 NH<sub>4</sub> bicarbonate  
SOL 7732-18-5 Water  
CON SUBSTAGE(1) 40 deg C  
SUBSTAGE(2) 40 deg C -> 80 deg C  
SUBSTAGE(3) 30 minutes, 80 deg C  
SUBSTAGE(4) 80 deg C -> 40 deg C

STAGE(3)

RGT E 13746-89-9 Nitric acid, zirconium(4+) salt  
SOL 7732-18-5 Water  
CON SUBSTAGE(1) 40 deg C  
SUBSTAGE(2) 30 minutes, 40 deg C

STAGE(4)

CON 18 hours, 380 deg C

STAGE(5)

RGT F 1333-74-0 H<sub>2</sub>  
CON 400 deg C

STAGE(6)

RCT Q 13554-71-7  
RGT F 1333-74-0 H<sub>2</sub>, G 108-67-8 Mesitylene  
SOL 7664-41-7 NH<sub>3</sub>  
CON SUBSTAGE(1) 4.9 MPa  
SUBSTAGE(2) 50 deg C

PRO R 740799-02-4, S 46263-19-8  
NTE catalyst was calcined, thermal

L3 ANSWER 2 OF 5 CASREACT COPYRIGHT 2006 ACS on STN  
AN 137:353285 CASREACT  
TI Convenient synthesis of human calcitonin and its methionine sulfoxide derivative

CAS ONLINE PRINTOUT

AU Shi, Tiesheng; Rabenstein, Dallas L.  
 CS Department of Chemistry, University of California, Riverside, CA, 92521,  
 USA  
 SO Bioorganic & Medicinal Chemistry Letters (2002), 12(16), 2237-2240  
 CODEN: BMCLE8; ISSN: 0960-894X  
 PB Elsevier Science Ltd.  
 DT Journal  
 LA English  
 RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

VERIFICATION INCOMPLETE

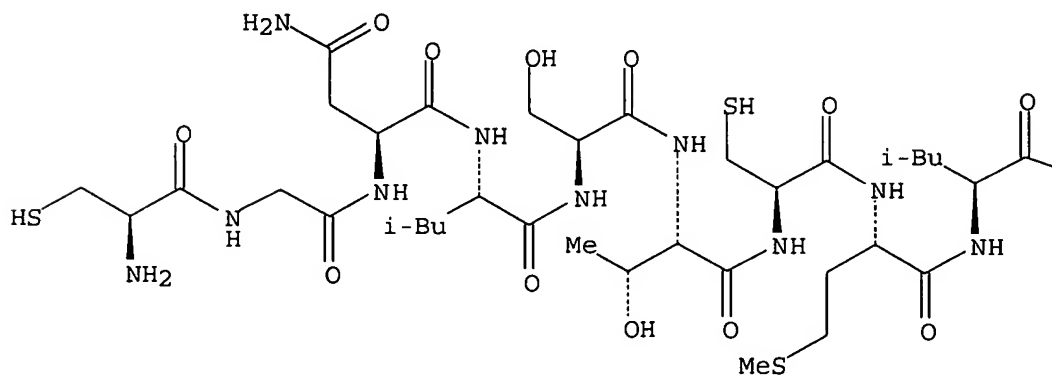
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 AND REACTION SEQUENCE RX(2), RX(4), RX(6)  
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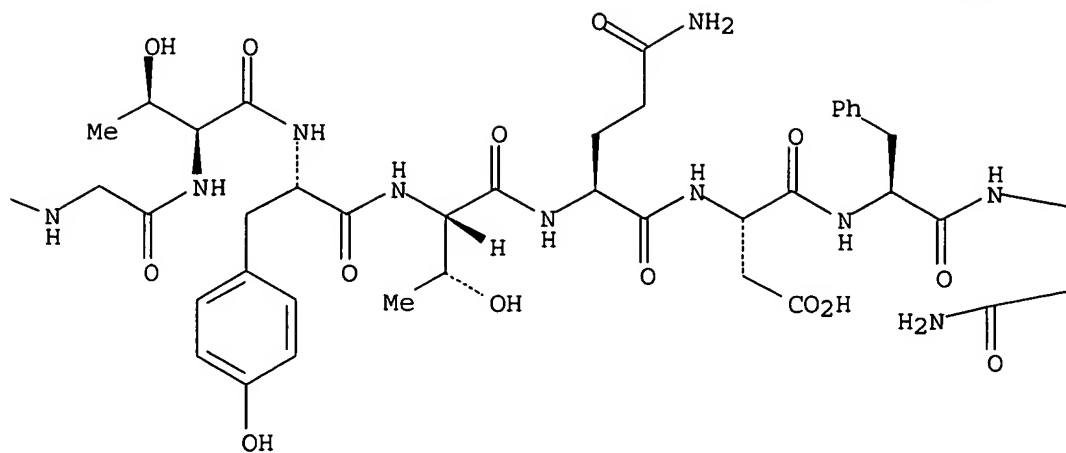
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 N + O + P + Q + X ==> Y...  
 ...A + B + C + D + E + F + G + H + I + J + K + L + M +  
 N + W + P + Q ==> X...  
 ...A + B + C + D + E + F + G + H + I + J + K + L + M +  
 N + W + P + Q ==> X...  
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 N + O + P + Q + X + Y ==> AH

3

STEPS  
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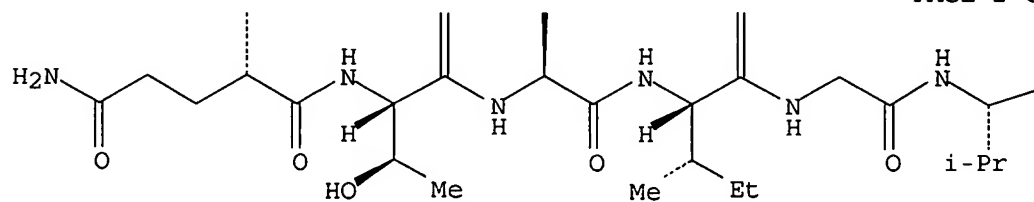
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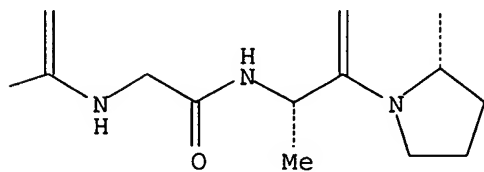


\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

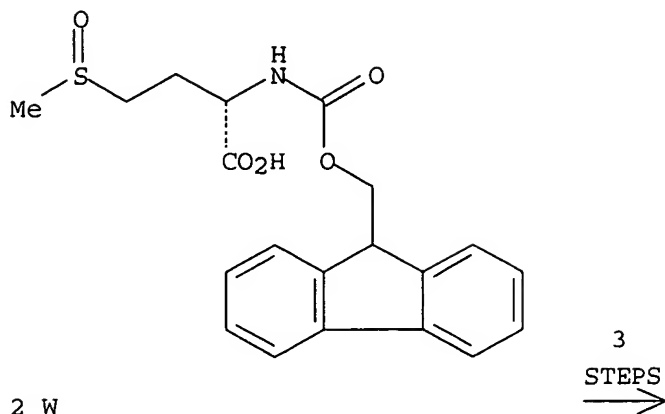


START NEXT REACTION SEQUENCE



Y





2 W

START NEXT REACTION SEQUENCE

STRUCTURE  
DIAGRAM  
IS NOT  
AVAILABLE

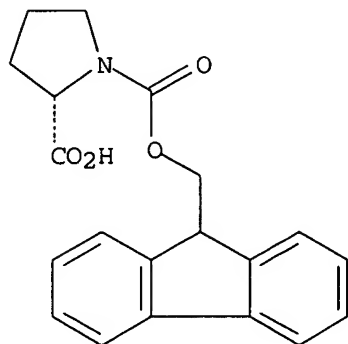
X

3  
STEPS  
→

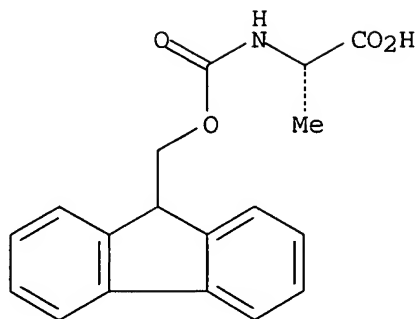
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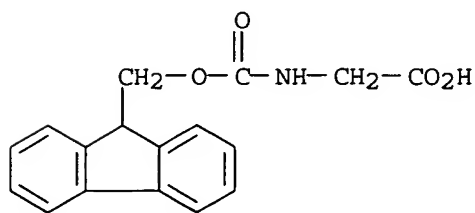
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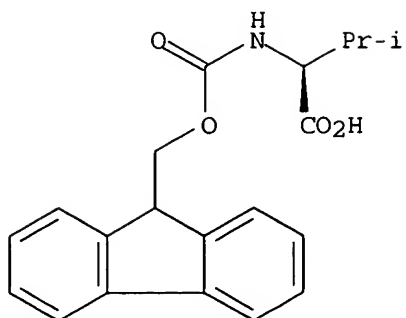
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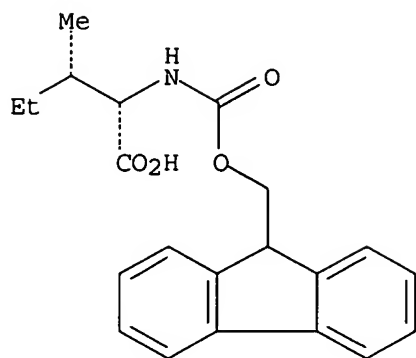
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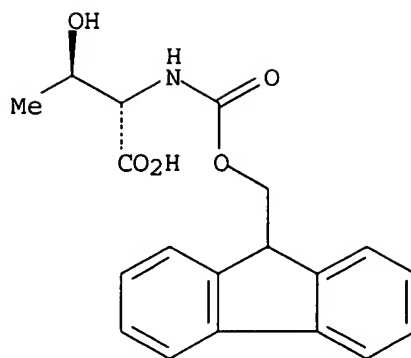
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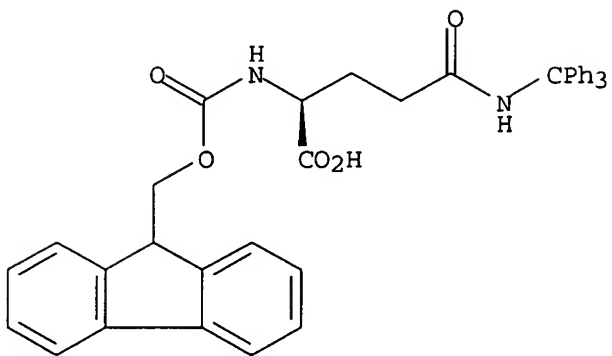
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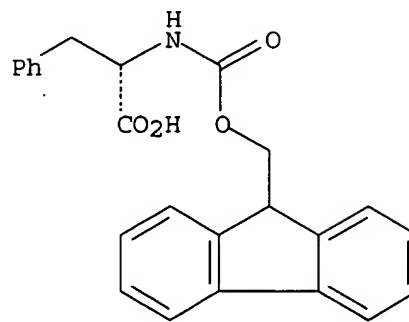
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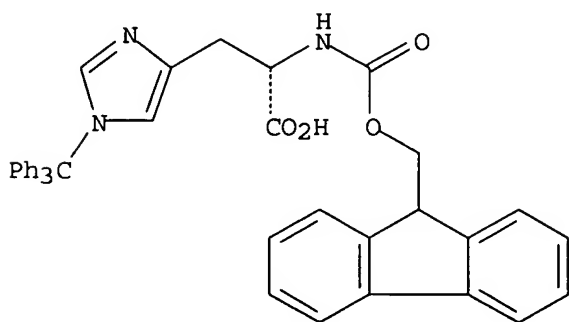
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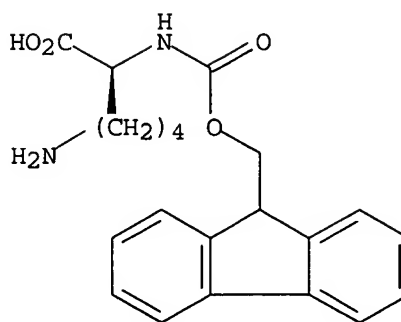
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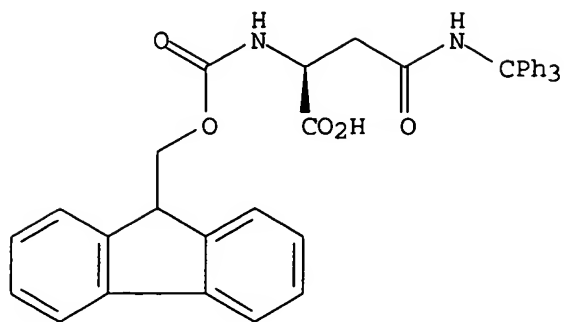
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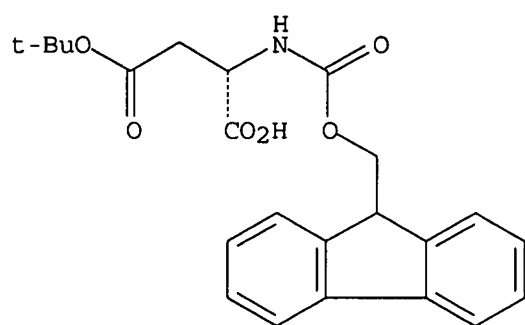
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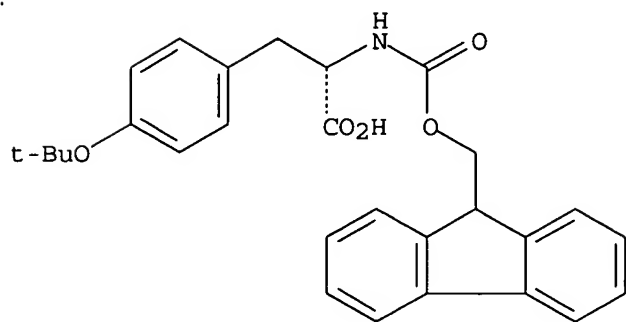
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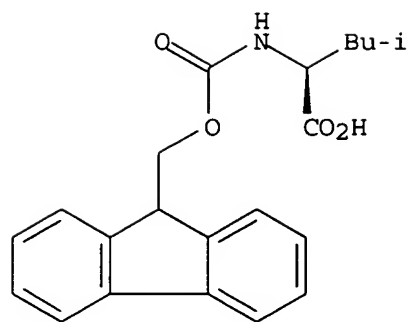
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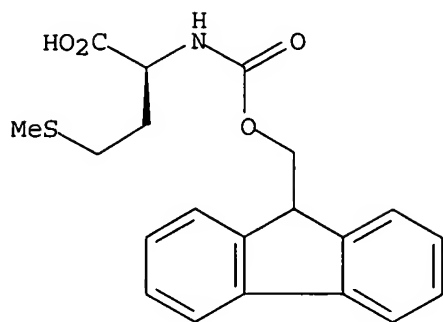
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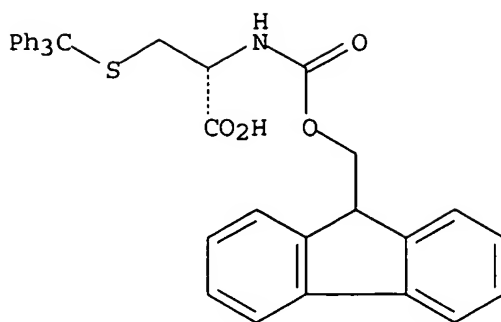
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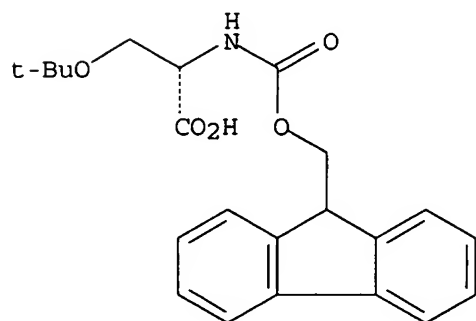
4 N



2 O



4 P

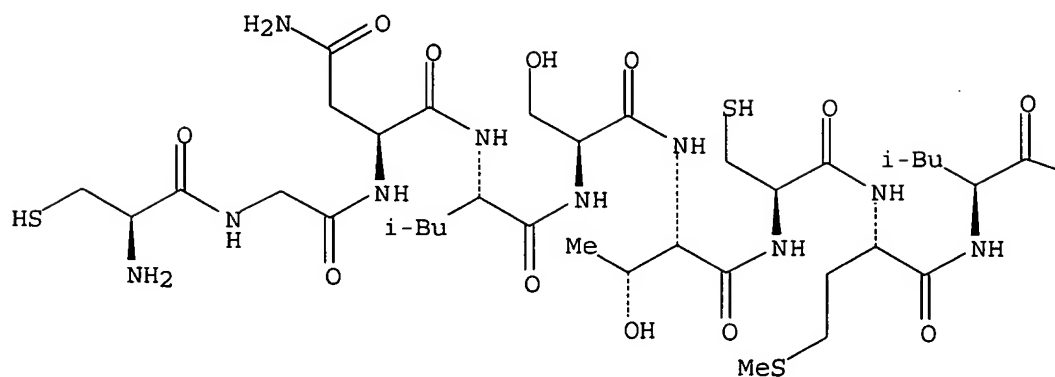


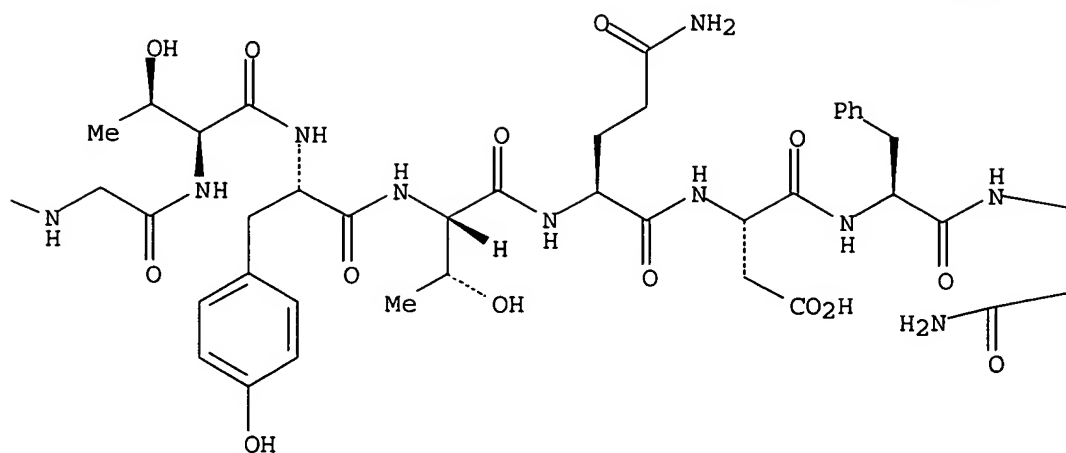
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STRUCTURE  
DIAGRAM  
IS NOT  
AVAILABLE

2 X

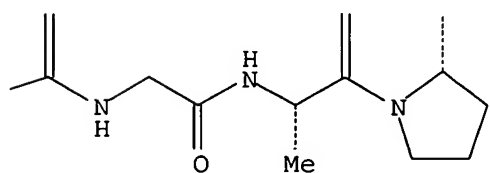
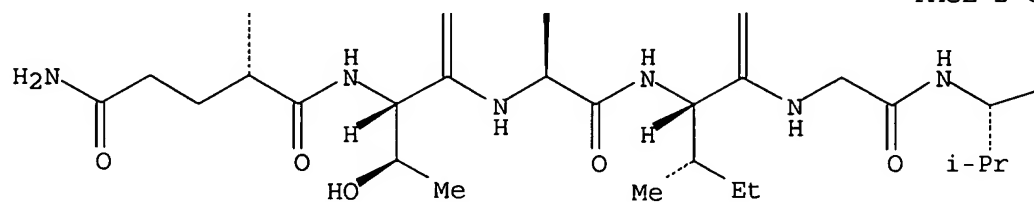
PAGE 1-A





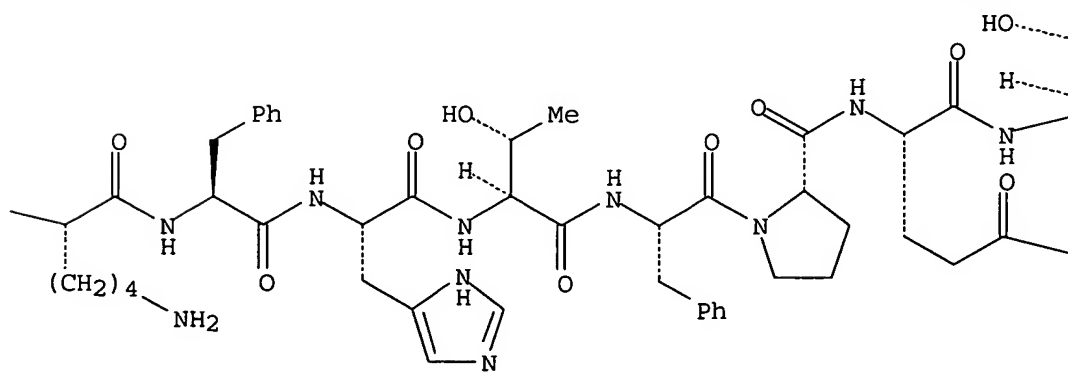
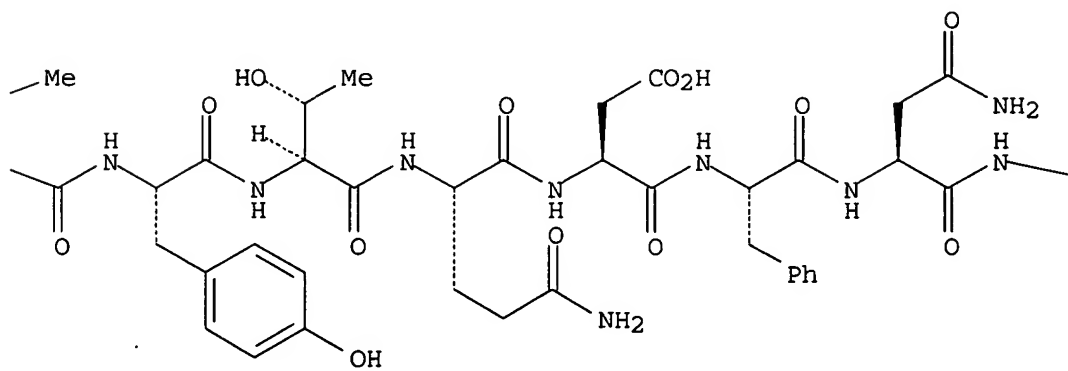
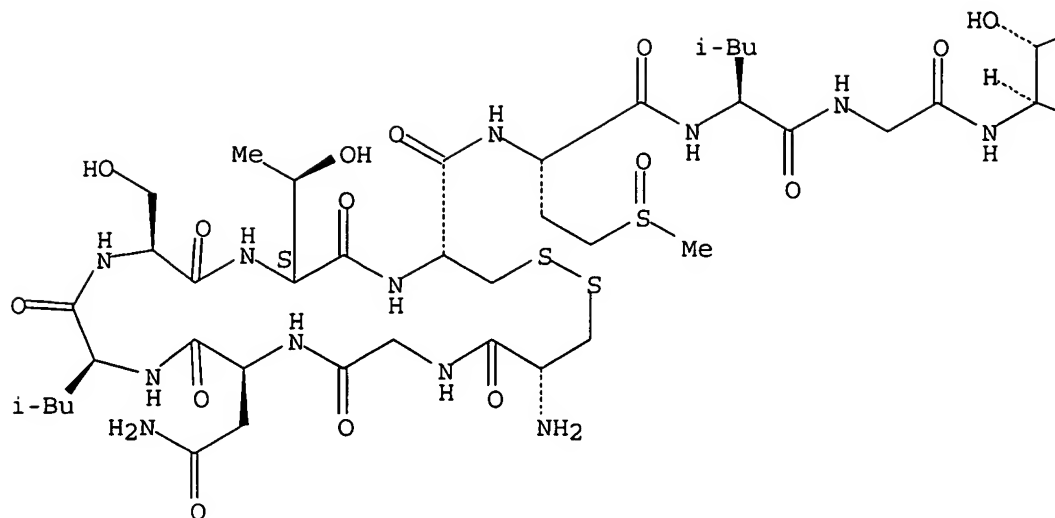
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

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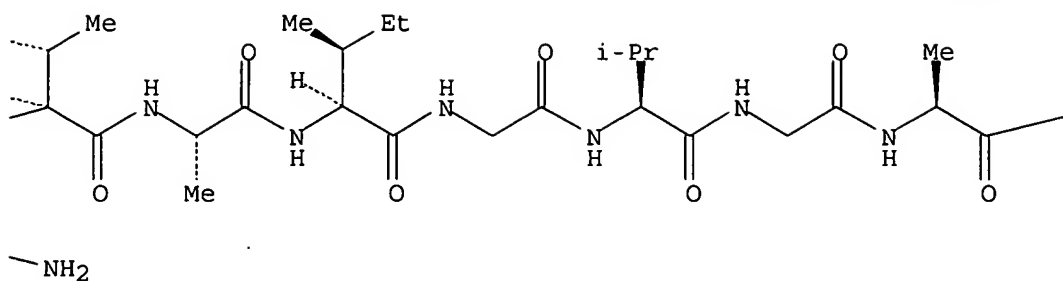


Y

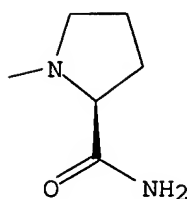
3  
STEPS  
→



PAGE 1-D



PAGE 1-E



AH

RX(1) RCT A 71989-31-6

## STAGE(1)

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(2)

RGT U 110-89-4 Piperidine  
SOL 68-12-2 DMF

## STAGE(3)

RCT B 35661-39-3  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(4)

RCT C 29022-11-5  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(5)

RCT D 68858-20-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(6)

## CAS ONLINE PRINTOUT

RCT E 71989-23-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(7)

RCT F 73731-37-0  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(8)

RCT G 132327-80-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(9)

RGT U 110-89-4 Piperidine

## STAGE(10)

RCT H 35661-40-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(11)

RGT U 110-89-4 Piperidine

## STAGE(12)

RCT I 109425-51-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(13)

RCT J 105047-45-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(14)

RCT K 132388-59-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(15)

RCT L 71989-14-5  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(16)

RCT M 71989-38-3  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(17)

RCT N 35661-60-0



## CAS ONLINE PRINTOUT

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(18)

RCT O 71989-28-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(19)

RCT P 103213-32-7  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(20)

RCT Q 71989-33-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

PRO R 474527-92-9D  
NTE solid-supported reaction, first stage is deprotection of Fmoc-  
PAL-PEG-PS resin, std. side chains protecting groups  
(tBu, trityl, Boc) assumed, piperidine used for all subsequent  
deprotection after coupling

RX(3) RCT R 474527-92-9D, X 474527-93-0D  
RGT Z 76-05-1 F3CCO2H, AA 108-95-2 PhOH, AB 100-68-5 PhSMe, AC  
540-63-6 HSCH2CH2SH  
PRO Y 27686-18-6  
SOL 76-05-1 F3CCO2H  
NTE solid-supported reaction, other products also detected

RX(2) RCT A 71989-31-6

## STAGE(1)

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(2)

RGT U 110-89-4 Piperidine  
SOL 68-12-2 DMF

## STAGE(3)

RCT B 35661-39-3  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(4)

RCT C 29022-11-5  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(5)

RCT D 68858-20-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

## CAS ONLINE PRINTOUT

T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(6)

RCT E 71989-23-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(7)

RCT F 73731-37-0  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(8)

RCT G 132327-80-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(9)

RCT H 35661-40-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(10)

RCT I 109425-51-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(11)

RCT J 105047-45-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(12)

RCT K 132388-59-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(13)

RCT L 71989-14-5  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(14)

RCT M 71989-38-3  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(15)

RCT N 35661-60-0  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i

## CAS ONLINE PRINTOUT

SOL 68-12-2 DMF

## STAGE(16)

RCT W 76265-70-8

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

T 693-13-0 i-PrN:C:NPr-i

SOL 68-12-2 DMF

## STAGE(17)

RCT P 103213-32-7

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

T 693-13-0 i-PrN:C:NPr-i

SOL 68-12-2 DMF

## STAGE(18)

RCT Q 71989-33-8

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

T 693-13-0 i-PrN:C:NPr-i

SOL 68-12-2 DMF

PRO X 474527-93-0D

NTE solid-supported reaction, first stage is deprotection of Fmoc-PAL-PEG-PS resin, std. side chains protecting groups (tBu,trityl,Boc) assumed, piperidine used for all subsequent deprotection after coupling

RX(2)

RCT A 71989-31-6

## STAGE(1)

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

T 693-13-0 i-PrN:C:NPr-i

SOL 68-12-2 DMF

## STAGE(2)

RGT U 110-89-4 Piperidine

SOL 68-12-2 DMF

## STAGE(3)

RCT B 35661-39-3

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

T 693-13-0 i-PrN:C:NPr-i

SOL 68-12-2 DMF

## STAGE(4)

RCT C 29022-11-5

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

T 693-13-0 i-PrN:C:NPr-i

SOL 68-12-2 DMF

## STAGE(5)

RCT D 68858-20-8

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

T 693-13-0 i-PrN:C:NPr-i

SOL 68-12-2 DMF

## STAGE(6)

RCT E 71989-23-6

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

T 693-13-0 i-PrN:C:NPr-i

SOL 68-12-2 DMF

## CAS ONLINE PRINTOUT

## STAGE(7)

RCT F 73731-37-0  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(8)

RCT G 132327-80-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(9)

RCT H 35661-40-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(10)

RCT I 109425-51-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(11)

RCT J 105047-45-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(12)

RCT K 132388-59-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(13)

RCT L 71989-14-5  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(14)

RCT M 71989-38-3  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(15)

RCT N 35661-60-0  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(16)

RCT W 76265-70-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(17)

## CAS ONLINE PRINTOUT

RCT P 103213-32-7  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(18)

RCT Q 71989-33-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

PRO X 474527-93-0D

NTE solid-supported reaction, first stage is deprotection of Fmoc-PAL-PEG-PS resin, std. side chains protecting groups (tBu, trityl, Boc) assumed, piperidine used for all subsequent deprotection after coupling

RX(1) RCT A 71989-31-6

## STAGE(1)

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(2)

RGT U 110-89-4 Piperidine  
SOL 68-12-2 DMF

## STAGE(3)

RCT B 35661-39-3  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(4)

RCT C 29022-11-5  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(5)

RCT D 68858-20-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(6)

RCT E 71989-23-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(7)

RCT F 73731-37-0  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(8)

RCT G 132327-80-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,

## CAS ONLINE PRINTOUT

T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(9)

RGT U 110-89-4 Piperidine

## STAGE(10)

RCT H 35661-40-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(11)

RGT U 110-89-4 Piperidine

## STAGE(12)

RCT I 109425-51-6  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(13)

RCT J 105047-45-8  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(14)

RCT K 132388-59-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(15)

RCT L 71989-14-5  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(16)

RCT M 71989-38-3  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(17)

RCT N 35661-60-0  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(18)

RCT O 71989-28-1  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i  
SOL 68-12-2 DMF

## STAGE(19)

RCT P 103213-32-7  
RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i

## CAS ONLINE PRINTOUT

SOL 68-12-2 DMF

## STAGE(20)

RCT Q 71989-33-8

RGT S 39968-33-7 3H-1,2,3-Triazolo[4,5-b]pyridine, 3-hydroxy-,  
T 693-13-0 i-PrN:C:NPr-i

SOL 68-12-2 DMF

PRO R 474527-92-9D

NTE solid-supported reaction, first stage is deprotection of Fmoc-PAL-PEG-PS resin, std. side chains protecting groups (tBu, trityl, Boc) assumed, piperidine used for all subsequent deprotection after coupling

RX(4) RCT R 474527-92-9D, X 474527-93-0D  
RGT Z 76-05-1 F3CCO2H, AB 100-68-5 PhSMe, AC 540-63-6 HSCH2CH2SH, AE 100-66-3 PhOMe  
PRO AD 73840-80-9  
SOL 76-05-1 F3CCO2H  
NTE solid-supported reaction, other products also detected

RX(6) RCT Y 27686-18-6, AD 73840-80-9  
RGT AI 12072-77-4 Platinatate(2-), dichlorotetrakis(cyano-κC)-, dipotassium, (OC-6-12)-  
PRO AH 67881-33-8  
NTE buffered soln.

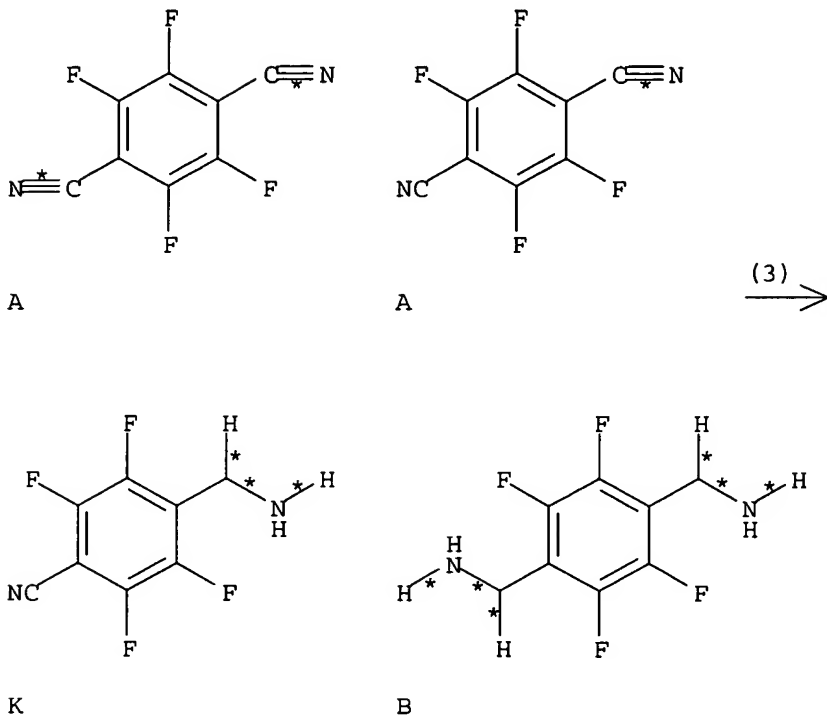
L3 ANSWER 3 OF 5 CASREACT COPYRIGHT 2006 ACS on STN  
AN 136:85657 CASREACT  
TI Production method for benzenedimethanol compound  
IN Murakami, Masatoshi; Suyama, Yuseki; Morikawa, Kohei  
PA Showa Denko K.K., Japan  
SO PCT Int. Appl., 30 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002002504	A1	20020110	WO 2001-JP5759	20010703
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	JP 2002020332	A2	20020123	JP 2000-202786	20000704
	AU 2001067914	A5	20020114	AU 2001-67914	20010703
	EP 1299343	A1	20030409	EP 2001-945794	20010703
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR			
	RU 2240301	C2	20041120	RU 2003-102369	20010703
	US 2003171626	A1	20030911	US 2002-311801	20021220
	US 6909023	B2	20050621		
PRAI	JP 2000-202786		20000704		
	US 2000-221922P		20000731		
	WO 2001-JP5759		20010703		

CAS ONLINE PRINTOUT

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

RX(3) OF 5 2 A ==> K + B...



RX(3) RCT A 1835-49-0  
RGT C 1333-74-0 H2  
PRO K 89992-51-8, B 89992-50-7  
CAT 7440-02-0 Ni  
SOL 67-56-1 MeOH

L3 ANSWER 4 OF 5 CASREACT COPYRIGHT 2006 ACS on STN  
AN 129:161421 CASREACT  
TI Process for the preparation of cyanoarylmethylamine  
IN Miura, Motoo; Suyama, Yuseki; Kondo, Hideyuki; Morikawa, Kouhei  
PA Showa Denko K.K., Japan  
SO PCT Int. Appl., 30 pp.  
CODEN: PIXXD2  
DT Patent  
LA Japanese  
FAN.CNT 2

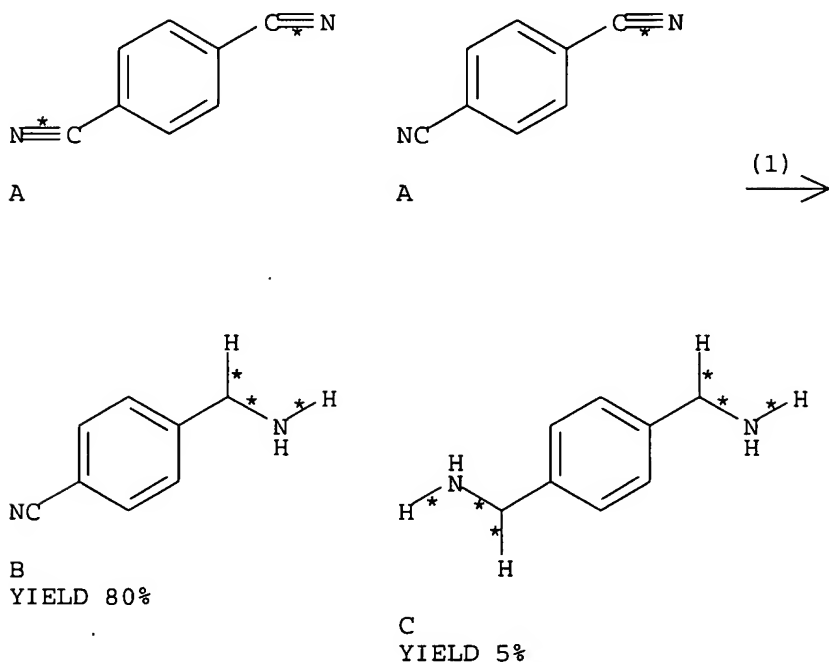
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9833767	A1	19980806	WO 1998-JP464	19980204
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM,				



## CAS ONLINE PRINTOUT

GA, GN, ML, MR, NE, SN, TD, TG  
AU 9857799 A1 19980825 AU 1998-57799 19980204  
EP 908447 A1 19990414 EP 1998-901507 19980204  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, FI  
IL 126443 A1 20030917 IL 1998-126443 19980204  
JP 3528970 B2 20040524 JP 1998-532729 19980204  
US 6114277 A 20000905 US 1998-155450 19980930  
NO 9804622 A 19981123 NO 1998-4622 19981002  
NO 319399 B1 20050808  
NO 2005003066 A 19981123 NO 2005-3066 20050622  
PRAI WO 1997-JP270 19970204  
WO 1998-JP464 19980204  
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

RX(1) OF 1 2 A ==&gt; B + C



RX(1) RCT A 623-26-7  
RGT D 1333-74-0 H<sub>2</sub>, E 1310-73-2 NaOH  
PRO B 10406-25-4, C 539-48-0  
CAT 7440-02-0 Ni  
SOL 67-56-1 MeOH  
NTE hydrogen pressure 10 kg/cm<sup>2</sup>; 100°

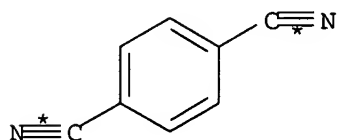
L3 ANSWER 5 OF 5 CASREACT COPYRIGHT 2006 ACS on STN  
AN 129:161420 CASREACT  
TI Process for the preparation of cyanoarylmethylamine  
IN Miura, Motoo; Suyama, Yuseki; Kondo, Hideyuki; Morikawa, Kouhei  
PA Showa Denko K.K., Japan  
SO PCT Int. Appl., 21 pp.  
CODEN: PIXXD2  
DT Patent

## CAS ONLINE PRINTOUT

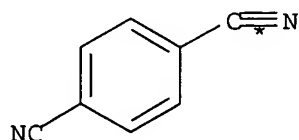
LA Japanese  
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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	AU 9715586	A1	19980825	AU 1997-15586	19970204
	CA 2250770	AA	19980806	CA 1998-2250770	19980204
	EP 908447	A1	19990414	EP 1998-901507	19980204
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CN 1216038	A	19990505	CN 1998-800091	19980204
	CN 1100035	B	20030129		
	CZ 290604	B6	20020814	CZ 1998-3522	19980204
	IL 126443	A1	20030917	IL 1998-126443	19980204
	JP 3528970	B2	20040524	JP 1998-532729	19980204
	US 6114277	A	20000905	US 1998-155450	19980930
	KR 2000044033	A	20000715	KR 1998-707871	19981001
	NO 9804622	A	19981123	NO 1998-4622	19981002
	NO 319399	B1	20050808		
	NO 2005003066	A	19981123	NO 2005-3066	20050622
PRAI	WO 1997-JP270		19970204		
	WO 1998-JP464		19980204		
RE.CNT	4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD ALL CITATIONS AVAILABLE IN THE RE FORMAT				

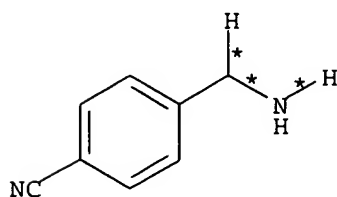
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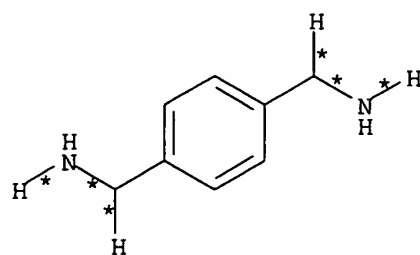


A



B

YIELD 80%



C

YIELD 5%

CAS ONLINE PRINTOUT

RX(1) RCT A 623-26-7  
RGT D 1333-74-0 H2, E 1310-73-2 NaOH  
PRO B 10406-25-4, C 539-48-0  
CAT 7440-02-0 Ni  
SOL 67-56-1 MeOH  
NTE hydrogen pressure 10 kg/cm2; 100°C

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